

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Basceri et al.)	Group Art Unit Unknown
)	
Appl. No.	:	Unknown)	
)	
Filed	:	Herewith)	
)	
For	:	HAZE-FREE BST FILMS)	
)	
Examiner	:	Unknown)	
)	

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Please amend the above-identified application as indicated below.

IN THE SPECIFICATION:

On page 1, after the title, please insert the following and paragraph:

--Reference to Government Contract

This invention was made with United States Government support under Contract No. DABT63-97-C-0001, awarded by the Advanced Research Projects Agency (ARPA). The United States Government has certain rights in this invention.

At page 1, between lines 2 and 3, please insert the following paragraph:

--Cross Reference to Related Application

This application is a divisional of U.S. Patent Application Serial No. 09/382,753, filed August 25, 1999.--

IN THE CLAIMS:

Please cancel Claims 1-15, 18-28 and 37-53 without prejudice.

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Please add the following new claims:

54. (New) A thin film structure, comprising:
a substrate assembly;
a first nucleation layer formed over the substrate assembly;
an orientation layer formed over the first nucleation layer;
a second nucleation layer formed over the orientation layer; and
a BST film formed over the second nucleation layer, wherein the orientation layer and the BST film have substantially the same desired crystal orientation.
55. (New) The thin film structure of Claim 54, wherein the first nucleation layer comprises NiO.
56. (New) The thin film structure of Claim 54, wherein the orientation layer and the BST film have a {100} orientation.
57. (New) The thin film structure of Claim 54, wherein the orientation layer comprises an electrode material.
58. (New) The thin film structure of Claim 54, wherein the orientation layer is made of a material selected from the group consisting of Pt, Ru, RuO_x, Ir, IrO_x, Pt-Rh, Pd and Mo.
59. (New) The thin film structure of Claim 54, wherein the orientation layer is made of platinum.
60. (New) The thin film structure of Claim 59, wherein the second nucleation layer comprises a material selected from the group consisting of Ti, Nb and Mn.
61. (New) The thin film structure of Claim 54, wherein the second nucleation layer has a thickness of less than about 50 Å.
62. (New) The thin film structure of Claim 54, wherein the BST film has a thickness of about 150 to 300 Å.
63. (New) The thin film structure of Claim 54, further comprising an electrode formed over the BST film.
64. (New) The thin film structure of Claim 54, wherein the substrate assembly includes polysilicon.
65. (New) The thin film structure of Claim 54, wherein the BST film comprises between about 50 and 53.5 atomic percent titanium.

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66. (New) The thin film structure of Claim 54, wherein the BST film comprises between about 52 and 53 atomic percent titanium.
67. (New) A thin film structure, comprising:
a substrate assembly;
a nucleation layer formed over the substrate assembly;
an electrode material formed over the nucleation layer; and
a BST film formed over the nucleation layer.
68. (New) The thin film structure of Claim 67, wherein the nucleation layer is NiO.
69. (New) The thin film structure of Claim 67, wherein the electrode material is Pt.
70. (New) The thin film structure of Claim 67, further comprising a second nucleation layer between the electrode material and the BST film.
71. (New) The thin film structure of Claim 67, wherein the second nucleation layer is selected from the group consisting of Ti, Nb and Mn.
72. (New) A thin film structure, comprising:
a substrate assembly;
an electrode material formed over the substrate assembly;
a nucleation layer formed over the electrode material; and
a BST film formed over the nucleation layer.
73. (New) The thin film structure of Claim 72, wherein the electrode material is Pt.
74. (New) The thin film structure of Claim 72, wherein the nucleation layer is Ti.
75. (New) The thin film structure of Claim 72, wherein the nucleation layer is Nb.
76. (New) The thin film structure of Claim 72, wherein the nucleation layer is Mn.
77. (New) The thin film structure of Claim 72, wherein the nucleation layer has a thickness of less than about 50 Å.

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REMARKS

With this amendment, Claims 16-17, 29-36 and 54-77 are pending in the present application. These claims correspond to Group II, species III identified by the Examiner in the Restriction Requirement mailed October 24, 2000 in the parent application.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 10-4-01

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